

IN THE CLAIMS

1. (Currently Amended) A method of manufacturing a semiconductor device in which a semiconductor element is formed in a semiconductor substrate, including selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of a target substrate including a semiconductor substrate ~~to keep a diameter of said semiconductor substrate substantially unchanged,~~ wherein a film formed on the peripheral portion and the beveled portion is removed under a condition that the film has non-selectivity to the target substrate.

2. (Currently Amended) The method of manufacturing a semiconductor device according to claim 1, wherein selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after forming a deep and irregular uneven portion is formed in the peripheral portion and the beveled portion of the target substrate.

3. (Currently Amended) The method of manufacturing a semiconductor device according to claim 1, wherein selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after ~~at least one additional step, which is included in the manufacturing steps of the semiconductor device forming at least a surface protecting film on the main surface of the target substrate, following forming that~~ a deep and irregular uneven portion is formed in the peripheral portion and the beveled portion in of the target substrate.

4. (Currently Amended) The method of manufacturing a semiconductor device according to claim 1, wherein selectively grinding or polishing the

peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after covering a portion other than the peripheral portion and the beveled portion on the main surface of the target substrate with a resist film, said step selectively grinding or polishing the peripheral portion and the beveled portion being carried out following forming that a deep and irregular uneven portion is formed in the peripheral portion and the beveled portion in of the target substrate.

C 1
Cont.
5, 6. (Withdrawn)

7-22. (Cancelled)

23-26. (Withdrawn)

27. (Previously Added) The method of manufacturing a semiconductor device according to claim 1, wherein selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after applying an anisotropic dry etching treatment to form a deep and irregular uneven portion in the peripheral portion and the beveled portion of the target substrate.

28. (Previously Added) The method of manufacturing a semiconductor device according to claim 27, wherein the anisotropic dry etching treatment is carried out so as to form a trench in the semiconductor substrate.

29. (Previously Added) The method of manufacturing a semiconductor device according to claim 28, wherein the trench is used for forming a trench capacitor formed on the semiconductor substrate.

30. (Currently Amended) A The method of manufacturing a semiconductor device ~~according to claim 1 further comprising:~~

forming an insulating film on a main surface of the a semiconductor

substrate;

applying an anisotropic etching to the insulating film and the
semiconductor substrate so as to form a trench in the semiconductor substrate; and

*C
Cont.*
depositing a polysilicon film on the main surface of the semiconductor
substrate and in the trench being followed by selectively grinding and polishing the
peripheral portion and the beveled portion on the main surface side of the target substrate
; and

after depositing the polysilicon film, selectively grinding and polishing the
peripheral portion and a beveled portion on the main surface side of the semiconductor
substrate, wherein the film remaining on the peripheral portion and the beveled portion is
removed under a condition that the film has non-selectivity to the semiconductor
substrate.

31-33. (Withdrawn)

34. (New) The method of manufacturing a semiconductor device
according to claim 1, wherein selectively grinding or polishing the peripheral portion and
the beveled portion is carried out, while remaining a diameter of said semiconductor
substrate substantially unchanged.

35. (New) A method of manufacturing a semiconductor device in
which a semiconductor element is formed in a semiconductor substrate, including
selectively grinding or polishing the peripheral portion and the beveled portion on the
main surface side of a target substrate including a semiconductor substrate, wherein at
least an uppermost layer of multi-layered films formed on the peripheral portion and the

beveled portion is removed under a condition that the at least uppermost layer of multi-layered films has non-selectivity to a layer of the multi-layered films which is under the at least uppermost layer of multi-layered films.

*C
Cont.*

36. (New) The method of manufacturing a semiconductor device according to claim 35, wherein selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after forming at least a surface protecting film on the main surface of the target substrate, following that a deep and irregular uneven portion is formed in the peripheral portion and the beveled portion of the target substrate.

37. (New) The method of manufacturing a semiconductor device according to claim 35, wherein selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after covering a portion other than the peripheral portion and the beveled portion on the main surface of the target substrate with a resist film, selectively grinding or polishing the peripheral portion and the beveled portion of the target substrate being carried out following that a deep and irregular uneven portion is formed in the peripheral portion and the beveled portion of the target substrate.

38. (New) The method of manufacturing a semiconductor device according to claim 35, wherein selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after applying an anisotropic dry etching treatment to form a deep and irregular uneven portion in the peripheral portion and the beveled portion of the target substrate.

39. (New) The method of manufacturing a semiconductor device according to claim 38, wherein the anisotropic dry etching treatment is carried out so as to form a trench capacitor in the semiconductor substrate.

40. (New) The method of manufacturing a semiconductor device according to claim 39, wherein the trench is used for forming a trench capacitor on the semiconductor substrate.

41. (New) The method of manufacturing a semiconductor device according to claim 35, wherein selectively grinding or polishing the peripheral portion and the beveled portion is carried out, while remaining a diameter of said semiconductor substrate substantially unchanged.

42. (New) A method of manufacturing a semiconductor device in which a semiconductor element is formed in a semiconductor substrate, including selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of a target substrate including a semiconductor substrate, wherein multi-layered films formed on the peripheral portion and the beveled portion are removed under a condition that the multi-layered films have non-selectivity to the target substrate.

43. (New) The method of manufacturing a semiconductor device according to claim 42, wherein selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after forming at least a surface protecting film on the main surface of the target substrate, following that a deep and irregular uneven portion is formed in the peripheral portion and the beveled portion of the target substrate.

C1
Cont.

*C
Cont.*

44. (New) The method of manufacturing a semiconductor device according to claim 42, wherein selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after covering a portion other than the peripheral portion and the beveled portion on the main surface of the target substrate with a resist film, selectively grinding or polishing the peripheral portion and the beveled portion being carried out following that a deep and irregular uneven portion is formed in the peripheral portion and the beveled portion of the target substrate.

45. (New) The method of manufacturing a semiconductor device according to claim 42, wherein selectively grinding or polishing the peripheral portion and the beveled portion on the main surface side of the target substrate is carried out after applying an anisotropic dry etching treatment to form a deep and irregular uneven portion in the peripheral portion and the beveled portion of the target substrate.

46. (New) The method of manufacturing a semiconductor device according to claim 45, wherein the anisotropic dry etching treatment is carried out so as to form a trench capacitor in the semiconductor substrate.

47. (New) The method of manufacturing a semiconductor device according to claim 44, wherein the trench is used for forming a trench capacitor on the semiconductor substrate.

48. (New) The method of manufacturing a semiconductor device according to claim 42, wherein selectively grinding or polishing the peripheral portion and the beveled portion is carried out, while remaining a diameter of said semiconductor substrate substantially unchanged.